REMARKS

Priority Claim

Per telephone conversation between Examiner Whatley and Attorney Andrew Cernota on June 2, 2010, the Office acknowledges an error made regarding entry of the priority claim on the office action and will correct that error with the following priority information. The present application is a National Phase application under 35 USC 371 of PCT Application No. PCT/IL2004/001000, filed 11/2/2004 which claims priority to Israel Application No. IL 158727, filed 11/3/2003.

Claim Objections

In para. 2 the Examiner has objected to the term "smaller" in claim 13. The term has been changed to "lower", which it is believed should overcome the objection.

Claims Rejections - 35 USC §112 Second Paragraph

The Office rejected Claims 1, 4, 5 and 11 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. As suggested by the Examiner, this term has been replaced by "direction".

Claim Rejections – 35 USC § 103

The Office has quoted the statute from 35 USC 103(a), which is referenced herein. The Office has rejected claim 1-5, 7-11 as being unpatentable over La Page (US 2,295,955) in view of Kennedy (US 5,244,263. Applicant has carefully considered the Office rejections and

respectfully submits that the amended claims, as supported by the arguments herein, are distinguishable from the cited reference.

As noted on page 2, lines 15-17 of the present application, an object of the present invention is to provide an automatic towel cleaning and drying machine in which the cleaning action is separated **into two independent stages**, a **first soaking and washing stage** and a **second rinsing and drying stage**, not **being performed simultaneously or being time dependent** [emphasis added].

At the outset, permission is requested to correct a typographical error in the statement on page 2, lines 8-11, where it is incorrectly stated that the two separate stages are constituted by (i) a first soaking stage and (ii) a second washing and drying stage. In fact, this contradicts what is subsequently stated at lines 15-17, viz:

> Still a further object of the present invention is to provide an automatic towel presenting, washing and drying machine and method in which the soaking and washing operations and the **subsequent** rinsing are performed in a single chamber. [Emphasis added]

It emerges from the above statement that the soaking and washing stage constitute a first initial stage and the rinsing (and drying) constitute a subsequent second stage. This is further evident from the description on page 5, lines 14-20, which reads:

> Hence, during the movement of a used towel web section towards the roller 4, it passes through the bath 35, is soaked in the detergent, rubbed against by the brushes 22, 22' **performing a washing action**, and proceeds to be wound on the roller 4 in its wet state. It should be noted that **the soaking and washing procedure** takes place immediately after the use of the towel section, before the dirt has sufficient time to settle into the towel and dry, thus greatly improving the cleaning capability of the machine. [Emphasis added]

Likewise, the statement as now amended conforms to the description on page 6, lines 13-15, which reads:

> In order to assure effective **rinsing and drying**, the speed of advancement of the towel from roller 4 to roller 6 is much slower than the speed of advancement through the bath 35 during the **soaking and washing** phase. [Emphasis added]

On this basis, the statement on page 2, lines 15-17 has been corrected to read:

> It is a further object of the present invention to provide an automatic towel presenting, washing and drying machine and method in which the cleaning action is separated into two independent stages, a first soaking and washing stage and a second [[washing]] rinsing and drying stage, not being performed simultaneously or being time dependent.

It is respectfully submitted that this corrects an obvious error, that the amended statement is fully supported by the description as filed and that consequently no new matter is thereby added.

This object, namely of separating the washing and rinsing stages, is desirable because it allows a soiled towel section to be soaked and washed immediately after use, without requiring either that it be rinsed and dried immediately or that it be rinsed and dried at the same time as another soiled section is being washed. Thus, for example, the soiled towel sections may be washed and the washed sections can be accumulated during regular use of the machine and accumulated washed towel sections may be subsequently rinsed and dried during "quiet hours" such as night-time when it is permissible for the system to be out of action. By *temporally separating* the two stages of the system and performing the rinsing and drying process "off-line", the system according to the invention does not require an endless roll of toweling and requires only a single bath which doubles as the soaking and washing bath during the first stage and as the rinsing bath during the subsequent rinsing and drying stage.

Moreover, such a system does not require that the initial washing and subsequent rinsing be carried out at a uniform feed rate. Thus, as noted on page 6, lines 13-15 of the present application:

> In order to assure effective rinsing and drying; the speed of advancement of the towel from roller 4 to roller 6, is much slower than the speed of advancement through the bath 35 during the soaking and washing phase.

This is emphatically **not** the case in La Page where it is specifically stated that:

> … thus it will be understood that whenever the motor 50 is operating the rollers 66-67 will simultaneously pull the toweling through the rinse tank and wring it substantially dry as it emerges therefrom, while the rolls 45-46 are pulling a following portion of the toweling through the wash tank and wringing it substantially dry as it emerges therefrom. [Page 2, Left Col., lines 56-66]

The fact that in La Page different sections of toweling are pulled through the wash tank and the rinse tank simultaneously precludes the possibility to subject these two stages of the cleaning process to different durations.

It appears that the system disclosed by La Page uses a so-called "endless" towel where the towel is in the form of a closed loop. Fig. 2 of La Page shows a first storage compartment 27, which maintains a large stock of clean toweling and another 38, above the wash tank 44, which maintains a stock of soiled towel prior to washing.

However, as noted above, washing the soiled towel and subsequent drying and ironing are carried out at the same speed. This, in turn, implies that to be capable of both washing and drying the towel in real time on-the-fly, there must either be a sufficient quantity of clean towel in the compartment 27 available for users, regardless of usage; or the feed rate of the toweling during both the washing and drying stages must be sufficiently fast to keep up with use. The latter is virtually impossible to achieve unless the rate of drying is so high as to ensure almost instantaneous drying of the damp towel by the heated drum 70. The power requirements in such

case would be impractically high. On the other hand, more gradual drying of the towel would imply a much lower feed rate, which would militate against the possibility to ensure a constant supply of clean toweling regardless of rate of usage.

However, the present invention relates to a non-endless towel roll, which belies the possibility always to ensure a continuous and endless supply of clean towel.

Unlike La Page, the invention employs different feed rates during the washing stage and subsequent drying stage so that the drying can be achieved at a sufficiently low feed rate to ensure thorough drying of the washed towel, without demanding use of a high power heater. The invention achieves this by separating the soaking and washing stage and the subsequent rinsing and drying stage and rendering them time independent. Separating the two stages allows for the washing to be done immediately after use, when it is easiest to remove dirt before it becomes ingrained. Thus, reference is made to the description on page 5:

> It should be noted that the soaking and washing procedure takes place immediately after the use of the towel section, before the dirt has sufficient time to settle into the towel and dry, thus greatly improving the cleaning capability of the machine. [Page 5, lines 17-20]

On the other hand, unlike La Page, the initial washing does **not** require that the washed towel be simultaneously dried at high speed precisely because it is carried out in a completely separate stage that is time-independent of the washing stage:

> When now the entire towel, or a predetermined portion thereof has been used, or at a preset time during the day or night, **there is initiated a reverse procedure of towel cleaning**. At the first stage, the bath 35 is emptied, advantageously by gravitation, from the mixture of the detergent and water through the electrically activatable valve 46 (Fig. 5). The bath 35 is then refilled by fresh water through the valve 34 and the **heating element 48** (Fig. 6), located at the bottom of the bath 35 and advantageously covered by a perforating and filtering plate 50, **is activated**. When the water reaches a preset temperature, **the**

> **heating element 48 is switched off and the heating elements 52 (Fig. 7) of the two contacting drying drums 54, 54' are switched on to heat the drums 54, 54' to a preset temperature**, controlled by the temperature sensor 56. As shown, as the drums 54, 54' reach the preset temperatures, they are caused to rotate in two opposite senses by means of a suitable arrangement of belts 58, 58' and pulleys 60, 60', 60". Preferably, the drums 54, 54' are furnished with anti-slipping strips 62, 62', so as to assure that the towel is properly traversed in between the two drums for even drying of both of its surfaces. **In this phase of operation, the towel moves from roller 4 to be taken up by roller 6, after passing again in the bath 35 for rinsing, and then through the drums 54, 54' for drying purposes**. **In order to assure effective rinsing and drying, the speed of advancement of the towel from roller 4 to roller 6, is much slower than the speed of advancement through the bath 35 during the soaking and washing phase**. [Page 5, line 25 to page 6, line 15; Emphasis added]

In para. 9 of the Office Action, the Examiner acknowledges that La Page does not disclose that the rollers are configured to rotate in a clockwise and counter-clockwise direction. However, he suggests that this is obvious since the ability to rotate rollers in opposite directions is known in the art and is taught by Kennedy (US 5,244,263). This conclusion is respectfully refuted.

Kennedy at col. 8, lines 9-32 teaches an endless towel system that allows **limited** back rotation of the rollers in order to permit the withdrawal of a limited length of soiled towel from the soiled towel cabinet in order to increase the total length of towel external to the system during use. Thus, as disclosed by Kennedy:

> … The use of such a unidirectional clutch to prevent soiled towel being withdrawn from the cabinet is known. However, in the present embodiment, it is desired to **permit the withdrawal of a limited length of soiled towel thereby allowing a controlled lengthening of the loop beneath the cabinet whilst still generally precluding the withdrawal of soiled towel**. For this purpose the housing 81 of each clutch bearing 80 **is rotatable in the reverse direction <u>for a</u>**

> **maximum of one revolution of the respective roller 28, 29** until a projection 82 extending outwardly from the housing engages a stop 83 on the mounting member for the roller. [Emphasis added]

In other words, the Examiner is correct that reverse rotation of the rollers is permitted but for a maximum of one revolution only. Moreover, the reverse rotation of the rollers is **manual** and is limited by the clutch: it is **not** controlled by the same controller that oversees the washing and drying process.

Nevertheless, in order to better distinguish over the cited references, claim 1 has been amended to recite that the controller operates such that successive soiled sections of the towel are soaked and washed in an initial washing stage and a plurality of soiled sections of the towel are rinsed and dried in a **subsequent rinsing and drying stage that is time independent of the soaking and washing stage**. Other amendments to claim 1 are for purposes of clarification.

The feature in claim 1 that the rinsing and drying stage is time independent of the soaking and washing stage is distinguished over La Page for the reasons explained above, where the two stages are time-dependent. It is further reiterated that rendering these two stages time-independent allows them to be carried out at different feed rates and since the rinsing and drying stage is carried out during down-time of the system, it can be carried out relatively slowly thereby obviating the need for high-power heating elements, with consequent safety hazards.

It is therefore respectfully submitted that claim 1 is allowable.

Claims 2 to 10 are likewise considered to be allowable if only by virtue of their being dependent on an allowable base claim.

New claim 18 also dependent on claim 1 adds specific limitations relating to the operation of the controller and is believed to be allowable, first by virtue of its being dependent on an allowable base claim; and secondly for reasons that will now be further elaborated in connection with claim 11.

Thus, in connection with claim 11, the Examiner acknowledges in para. 21 that La Page does not disclose emptying the washing chamber after washing and refilling it with clean water for

rinsing. However, he avers that since La Page teaches refilling with washing detergent when the washing detergent becomes spent, it would, in his words, have been obvious to refill with rinsing liquid "to allow a more compact system". This contention is respectfully traversed for two different reasons.

First, there is absolutely nothing in La Page or for that matter in Kennedy to suggest the desirability of compactness. To the contrary, as already noted, La Page employs two storage compartments 27 and 38, which respectively maintain a large stock of clean toweling and a stock of soiled towel prior to washing. He further **requires** *two separate* baths since, as noted repeatedly, his washing and rinsing stages are carried out **simultaneously**, albeit, of course, on different sections of toweling.

Therefore, even if the motivation of the present invention were to provide a more compact system, as suggested by the Examiner, there is no motivation in La Page to make his system more compact. Not only this, but even if one skilled in the art were motivated to somehow render his system more compact, this could not be achieved by dispensing with one of his two baths and using only a single bath for the dual purpose of washing and rinsing, precisely because La Page **requires** that these two separate stages be carried out simultaneously and, indeed, at the same feed rate.

But even apart from these considerations, in fact the motivation in the present invention to use only a single bath and to reverse the direction of the rollers prior to rinsing in order to back-feed the washed sections of toweling into the single bath for rinsing is not dictated by considerations of compactness. Rather it is dictated by the need to dry the rinsed toweling at a sufficiently slow feed rate that permits gentle heat using low power heating elements, while nevertheless allowing the soaking and washing to be carried out at high speed.

Claim 11 includes limitations that were not present in claim 1 as originally presented and which, it is respectfully submitted, are patentable over La Page taken either on its own or in combination with Kennedy. Most particularly, the following actions as defined in claim 11:

> transferring said section after use to said washing chamber containing cleaning liquid to be soaked and washed by the cleaning liquid;

transferring said soaked section to said second roller by rotating it in a first direction;

emptying said washing chamber from cleaning liquid and filling in rinsing liquid;

selectively rotating said second roller in an opposite direction to said first direction for rinsing said towel section in the washing chamber

are precisely the features of claim 11 that permit time-separation of the soaking and washing and subsequent rinsing and drying stages, with the attendant benefits as explained above.

Accordingly, claim 11 is believed to be allowable.

Claims 12 to 17 are likewise considered to be allowable if only by virtue of their being dependent on an allowable base claim.

Nevertheless some additional comment is required regarding the rejection of claim 13. In para. 24, the Examiner acknowledges that La Page and Kennedy do not teach the speed of rotation of the rollers during rinsing and drying being lower than the speed of rotation during soaking and washing. However, he avers that this would be an obvious modification to provide the benefit of increased drying time and therefore more thorough drying.

We agree that the **consequence** of employing a slower rotation speed for drying the rinsed toweling is that the drying is more thorough and, no less importantly as noted above, that lower power heating elements can be used. But we dispute that there is any **motivation** in either La Page or Kennedy to increase drying time. Moreover, as noted above in La Page the drying speed must be identical to the washing speed since they are carried out **simultaneously**.

> … whenever the motor 50 is operating the rollers 66-67 will **simultaneously** pull the toweling through the rinse tank and wring it substantially dry as it emerges therefrom, while the rolls 45-46 are pulling a following portion of the toweling through the wash tank and wringing it substantially dry as it emerges therefrom. [Page 2, Left Col., lines 56-66]

It is only by separating the initial washing and subsequent drying operations to two time-independent stages that the present invention allows for there to be any difference between the speeds of these two stages. Consequently, there is neither **motivation** in either La Page or Kennedy to increase drying time relative to washing time, **nor is there any teaching** as to how this could or might be accomplished without complete redesign of the system taught by La Page.

Favorable reconsideration and allowance are accordingly requested.

Applicant believes the above amendments and remarks to be fully responsive to the Office Action, thereby placing this application in condition for allowance. No new matter is added. Applicant requests speedy reconsideration, and further requests that Examiner contact its attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,

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